IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Gabriel Aaron Cohen et al	Examiner:	Nicholas Augustine
Serial No.:	10/727,275	Art Unit	2179
Filing Date:	12/03/2003		
Title:	Self-configuring component for recognizing and transforming host data		

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P. O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

This Brief supports the appeal to the Board of Patent Appeals and Interferences from the final rejection dated 04/1/2010, in the application identified above. Appellant filed the Notice of Appeal on 6/16/2010, and now submits this Brief as required by 37 C.F.R. §1.192(a). This Brief addresses the issues raised in the final rejection.

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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is International Business Machines Corporation pursuant to the Assignment recorded on 12/03/2003, at Reel 014767 and Frame 0311.

II. RELATED APPEALS AND INTERFERENCES

With respect to the appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal, to the best of the knowledge of the undersigned, there are none.

An earlier appeal brief was filed on 7/1/2009 that resulted in a reopening of prosecution without consideration by the BPAI.

III. STATUS OF CLAIMS

Claims 1-9 and 11-21 were finally rejected in an Office action dated 04/01/2010. Claim 10 was earlier canceled. Dependent claims 6, 14 and 20 were said to be drawn to allowable subject matter if rewritten in independent form including all limitations of the base claims and any intervening claims. Dependent claims 6, 14 and 20 remain in dependent form at this time.

Claims 8-9 and 11-21 are the pending claims that are the subject of this appeal and reflect the claim state after an amendment filed on Dec. 29, 2009. These claims are set forth in the attached Claims Appendix VIII.

IV. STATUS OF AMENDMENTS

A proposed amendment was filed on 06/29/2010 under 37 CFR 1.116 after the filing of a Notice of Appeal to put some claims in better form for appeal. An Advisory Action denying entry of the proposed amendment was received on July 29, 2010.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 8 recites a computer system using a plurality of agents to scan a character-based interface, where each agent is designed to detect a different type of screen component (a specific character pattern) in the screen data of a character-based user interface (see line 12 of paragraph 24, page 9, to line 4 of page 10) and to define a match region (screen location) for each screen component found by the independent agents. Claim 8 further recites an agent manager for determining whether two or more match regions overlap and for resolving the overlap.

Claim 9, dependent from claim 8, requires that each agent render its output as a widget, wherein the aggregation of widgets forms an output page.

Claim 11, dependent from claim 8, requires the resolution of a conflict between overlapping match regions based on a policy to determine which agent associated with one match region controls the overlap region.

Claim 12, dependent from claim 11, requires assigning a predetermined priority to each agent to control the overlapping regions.

Claim 13, dependent from claim 11, defines the policy for resolving overlapping match regions as comparing the size of the conflicting regions

which overlap and selecting the agent having the smaller size region to control the overlapped region.

Claim 14, dependent from 11, defines the policy for resolving overlapping match regions as assigning a dynamic priority to each conflicting region based on the projected amount of time expended to render each conflicting region.

Independent claim 15 and its dependent claims 16 through 21 claim a method for transforming a character-based user interface to a web enabled user interface in language substantially equivalent to that of claims 8-9 and 11-14, but as a method (page 9, to line 4 of page 10; Fig. 4B and paragraph 27. Also see Fig. 7, steps 740 and 750; see lines 1-3 of paragraph 37, page 15. Also see Fig. 7, step 760).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues to be resolved are whether claims 8-9 and claims 11 through 21 are rendered obvious under 35 U.S.C. §103(a) by the combination of U.S. patent 5,940,075 (hereinafter "Mutschler") in view of U.S. patent 7,281,236 (hereinafter "Galvin").

VII. ARGUMENT

The present invention as claimed is an innovative technique of converting legacy screen data into GUI (Graphical User Interface) screen data by the use of multiple agents, each of which scan the character-based screen data for a different type of screen component, such as a list or a character field to accept input characters from a user, or a set of function keys such as were used in so-called "dumb terminals" with legacy mainframe computer applications. None of the known prior art that attempt to transform character-based screens into GUI interface screens, including Mutschler and Galvin, use a method based on multiple, independent scanning agents as summarized above. The use of independent agents simplifies the problem of recognizing patterns in the data. For example, one agent might look for a menu of function keys anywhere in the screen data, while another agent might look for a simple text field for receiving user input. However the use of independent agents also introduces a problem not shared in the prior art, namely that of calculating potentially overlapping screen match regions for screen components found by different ones of the agents. When this occurs, the invention resolves such a conflict according to a set of priorities. A point of novelty of the invention as set forth in the independent claims 8 and 14 is the use of multiple scanning agents, and the detection and resolution of overlapping match screen regions of screen components. The dependent claims add further novel aspects that are discussed below.

The Mutschler and Galvin Patents

Mutschler discloses a process that uses a Screen Control Language (SCL) and a legacy form to build a Host Reply Definition (HRD) file (see Figs. 5a-5c). An HRD file contains information that defines how to generate an HTML file corresponding to a legacy screen. An HRD file is defined at col. 5, line 62 as follows:

> *Host Reply Definition (HRD) shall mean a file used in the PowerClient 3GL environment that maps characters in the data stream from the host with the fields and their Data Names in the modernized Form.*

Step 61 of Fig. 5b generates SCL text and an HDR file for a captured legacy form. There is no teaching in the specification or figures relating to independent scanning agents, nor of resolving overlapping regions in either the legacy forms or in the resulting browser forms.

Step 93 of Fig. 6c parses an HRD file and step 94 generates the corresponding HTML file that is sent to a browser at step 96. The following quotation is taken directly from col. 9 line 64 to col. 10, line 12 of the Mutschler patent:

> *Referring now to FIG. 6C at the connector H, the Web Agent parses the WDF or HRD file and associates Data Names from it with corresponding Data Values from the returned application Form data into Data Name/Data Value pairs (block 93). Next, the Web Agent generates an HTML page having an*

object reference to the SCL Web Control, whose parameters include:

1.) The SCL Text itself;
2.) A list of the Data Name/Data Value pairs; and,
3.) Other information necessary for the display of the SCL and interpretation of the Data Name/Data Value pairs (block 94).

The Web Agent then returns the generated HTML page to the Web server (block 95). Following this, the Web server, which has been waiting for the response from the Web Agent, returns the HTML page to the Web browser (block 96).

It is clear that Mutschler uses a single process, as compared to multiple independent agents, to convert a legacy screen into a single file that in turn is used to generate a corresponding HTML file. Mutschler also contains no mention of recognizing and resolving overlapping regions of screen patterns as required by the independent claims. Examiner admits in Section 4 of the 4/1/2010 Office action that Mutschler does not teach the recognition and resolution of overlapping screen regions.

Examiner cites to Mutschler col. 9, lines 23-47 and col. 6, lines 24-32, 54-64 for the proposition that Mutschler discloses the use of multiple scanning agents. However, col. 9, lines 23-47 refer to Mutschler Fig. 6A, which in turn shows steps of a web server in parsing a URL at the beginning of operation. There is nothing relating to the use of multiple scanning agents. Similarly, Mutschler at col. 6, lines 24-32 and 54-64 also do not relate to multiple scanning agents.

Examiner cites to Mutschler col. 5, lines 62-65; col. 6, lines 33-36 and col. 8, lines 27-39 for the proposition that Mutschler defines a match region for each host component type found by an agent. However, col. 5, lines 62-65 merely define the Host Reply Definition (HRD) file discussed briefly above, which have nothing to do with multiple agents and associated matching screen regions. Col 6, lines 33-36 define a Workstation Driver file that also has nothing to do with multiple agents and associated matching screen regions. The same is true for col. 8, lines 27-39, which describe a question in step 53 of Fig. 5A in looking for the existence of a host file to transform at the beginning of an operation.

Examiner cites Mutschler col. 5, lines 62-65; col. 6, lines 33-36 and col. 8, lines 27-39 for the proposition that Mutschler determines if matching screen regions overlap. All of these citations are covered immediately above and have nothing to do with overlapping screen regions.

While the following Examiner statement seems in conflict with the above Examiner statements, nevertheless, in the first full paragraph of page 4 of the Final Office Action appealed from, Examiner states that

> *"Mutschler does not specifically teach recognition and resolution of conflicts between the two or more match regions that overlap; Mutschler further teaches the use of a single process, rather than independent agents."*

However, Examiner asserts that the Galvin patent does teach these missing capabilities in a similar field of endeavor. Examiner relies on Galvin (specifically col. 5, line 59 to col. 6, line 14) for support that a patent in the same field of endeavor as Mutschler does teach the resolution of overlapping screen regions.

Galvin teaches that applications containing objects written for a non-web environment can be translated into web-enabled objects for execution of the application in a different web-enabled system. The cited material in Galvin at col. 5, line 59 to col. 6, line 14 refers to an overload parser that examines objects to be translated and resolves style

inconsistencies between an original object and a translated object. The cited material in col. 6 further describes that if the base application contains a compound object, the translation into a web-based object converts the compound object into unary display objects. This is not a process of detecting overlapping screen regions and resolving the overlapping regions; rather, it is a process of simplifying a complicated object by breaking it into unary objects for performing translations.

Thus, it is clear that Mutschler and Galvin, considered alone or in combination, do not disclose, teach or suggest the invention having multiple, independent scanning agents and the features of determining if the multiple scanning agents define overlapping match regions and, if so, resolving the overlapping regions.

The Dependent Claims

It has been demonstrated that neither Mutschler nor Galvin teach the detection and resolution of overlapping screen regions. Therefore, dependent claims 11-14 and 17-21, which relate to the resolution of overlapping regions, further distinguish over Mutschler and Galvin in their own right. Dependent claims 9 and 16 relate to transforming character-based screen components into widgets and are entitled to allowance at least by their dependency.

Respectfully submitted,

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/Jerry W Herndon/

Attorney of Record
Reg. No. 27,901
17 Crosswinds Estates Dr.
Pittsboro, NC 27312
(919) 542-0345

VIII. CLAIMS APPENDIX

The claims on appeal are as follows:

8. A computer system for recognizing a character-based user interface having a plurality of host component types and transforming the character-based user interface to a web enabled user interface, the computer system comprising:

a memory comprising a plurality of agent objects to scan the character-based user interface, each agent object determining the existence of a different host component type from the other agents, each agent object defining a match region for each host component type found to exist in the character-based user interface,

an agent manager for determining whether two or more match regions overlap and for resolving the overlap, each agent object rendering its associated match region to compose the web enabled user interface; and

a processor for running the plurality of agent objects.

9. The computer system of claim 8 wherein each agent is configured to render each match region as a widget, the aggregated widgets composing a formatted output page.

11. The computer system of claim 8 wherein the system is configured to resolve a conflict between two or more overlapping match regions based on a policy to determine which agent associated with one match region controls the overlap region, the processor configured to execute the policy.

12. The computer system of claim 11 wherein the policy executed by the processor comprises:

assigning a predetermined priority to each agent;

comparing the predetermined priority of the two or more agents detecting overlapping match regions; and selecting the agent with the highest predetermined priority to control the overlapping region.

13. The computer system of claim 11 wherein the policy executed by the processor comprises:

comparing the size of the conflicting regions which overlap; and

selecting the agent having the smaller size region to control the overlapped region.

14. The computer system of claim 11 wherein the policy executed

by the processor comprises:

assigning a dynamic priority to each conflicting region having a common overlapping region, the dynamic priority based on the projected amount of time expended to render each conflicting region; and

selecting the agent controlling the conflicting region having the highest priority to retain control over the overlapping region.

15. A method for recognizing a character-based user interface having a plurality of host component types and transforming the character-based user interface to a web enabled user interface, the method comprising:

scanning the character-based user interface for a plurality of agents;

determining which host component types exist in the character-based user interface, each agent determining the existence of a different host component type from the other agents;

defining a match region for each host component type found to exist by an agent in the character-based user interface;

determining whether two or more match regions overlap;

upon a determination that two or more match regions overlap,

resolving a conflict between said two or more match regions that overlap; and

rendering match regions associated with each agent to compose the web enabled user interface.

16. The method of claim 15 wherein rendering match regions associated with each agent to compose the web enabled user interface further comprises

rendering each match region as a widget, the aggregated widgets composing a formatted output page.

17. The method of claim 15 wherein resolving a conflict between said two or more match regions that overlap further comprises:

resolving a conflict between two or more match regions based on a policy to determine which agent associated with a match region controls the overlap region.

18. The method of claim 17 wherein the policy comprises:

assigning a predetermined priority to each agent;

comparing the predetermined priority of the two or more agents detecting overlapping match regions; and selecting the agent with the highest predetermined priority to control the overlapping region.

19. The method of claim 17 wherein the policy comprises:

comparing the size of the conflicting regions which overlap; and

selecting the agent having the smaller size region to control the overlapped region.

20. The method of claim 17 wherein the policy comprises:

assigning a dynamic priority to each conflicting region having a common overlapping region, the dynamic priority based on the projected amount of time expended to render each conflicting region; and

selecting the agent controlling the conflicting region having the highest priority to retain control over the overlapping region.

21. The method of claim 18 wherein the agents detecting overlapping match regions negotiate whether to relinquish control of each agent's overlap region.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.